

ABSTRACT

A communication protocol that provides link-level and media access control (MAC) level functions for wireless (e.g., ad-hoc) networks and is robust to mobility or other dynamics, and for scaling to dense networks. In a mobile or otherwise dynamic network, any control-packet collisions will be only temporary and fair. In a dense network, the network performance degrades gracefully, ensuring that only a certain percentage of the common channel is consumed with control packets. The integrated protocol allows packets (e.g., data scheduling control packets) to be scheduled in a collision-free and predictable manner (known to all neighbors), multicast packets can be reliably scheduled, as well as streams of delay- or delay-jitter-sensitive traffic. Further, using an optional network code, the scheduling of control packets can appear to observers to be randomized.

650720 32294260